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EXAMINER	
OLANIRAN, FATIMAT O	
ART UNIT	PAPER NUMBER
2614	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/520,201	AARTS ET AL.	
	Examiner	Art Unit	
	FATIMAT O. OLANIRAN	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18 and 41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1/5/2009 have been fully considered but they are not persuasive.

Applicant argues claim 1, "FIG. 6 does not show any post-processor and element 13 in FIG. 6 does not control any post-processor. Element 13 is a noise filter which is controlled to provide a quantization error feedback signal for controlling quantization error of quantizer 11. The Office Action does not allege that quantizer 11 is a post-processor which alters successive fragments of a decoded audio signal that have been produced by decoding successive fragments of a previously-encoded audio signal - as recited in claim 1. Applicants respectfully submit that quantizer 11 is not such a post-processor. Indeed, the circuit in FIG. 6 does not process successive fragments of a decoded audio signal that have been produced by decoding successive fragments of a previously-encoded audio signal."

Examiner respectfully disagrees, Akagiri clearly discloses post-processor, elements of Fig. 1 and 6. Examiner gives claims limitations the broadest most reasonable interpretation of one of ordinary skill in the art. Post-processing is processing after a primary signal processing is complete. Post-processing may involve noise reduction, signal shaping etc. Akagiri discloses a primary signal processing of encoding or decoding (background of the invention and col. 9 line 47-67 and col. 10 line 1-30). Akagiri clearly discloses a post-processor (Fig. 1 and 6) and in addition Akagiri discloses post-processing the encoded signal (Fig. 14-15) and post processing a

decoded signal (Fig. 16). The FOAM referred to col. 9 lines 57-61 where it clearly discloses the post-processing of Fig. 14.

Applicant argues, claim 10, "Among other things, the method of claim 10 includes determining a degree to which quantization noise introduced in encoding successive fragments of a previously-encoded audio signal becomes audible due to post-processing a corresponding decoded audio signal, and regulating the post-processing step according to the degree. For similar reasons to those set forth above with respect to claim 1, Applicants respectfully submit that does not disclose this combination of features."

Examiner respectfully disagrees; Akagiri clearly discloses performing all the elements disclosed in claim 1 and 10 (Fig. 1 and 6 and col. 5 line 25-55). Akagiri discloses determining audible noise (abstract and Fig. 1, 6), successive fragments (inherent to a digital process as disclosed), encoding/decoding (Fig. 14-16), regulating the post-processing (Fig. 2 done by the error feedback loop, frequency analysis of element 17 and modeling of element 15 and 18).

Based on the amendment the rejection has been modified but the references used remain the same.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 7-8, 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 line, 4-5, "... decoded audio signal and to provide therefrom indications of quantization levels employed in the successive fragments of said previously-encoded audio signal." It is unclear if "encoding" and "previously-encoded" refer to the same process.

Claim 8 lines 3-4, "…employed in encoding the successive fragments of said previously-encoded audio signal…" It is unclear if the fragments are being encoded twice.

Claim 16 same as above, "previously-encoded" and "encoded"

Examiner assumes the signal is encoded once, as in claim 7 applicant only discloses a single decoding.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 5-6 10-12, 14-15, 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Akagiri et al (RE37864, reissue of US5204677).

Claim 1, Akagiri discloses an audio system comprising: a post-processor arranged to alter successive fragments of a decoded audio signal to provide successive fragments of a post-processed audio signal (Fig. 14-15 and col. 9 line 47-65), the successive fragments of the decoded audio signal having been produced by decoding successive fragments of a previously-encoded audio signal (col. 9 line 47-49); a distortion detector (Fig. 6 and col. 5 line 31-56) for determining a degree to which quantization noise introduced in encoding said successive fragments of said previously-encoded audio signal becomes audible due to said post-processing (Fig. 16 and col. 10 line 15-29) ; and a regulator arranged to control said post-processor according to said degree (Fig. 6 and col. 5 line 31-41).

Claim 2 analyzed with respect to claim 1, Akagiri discloses wherein the distortion detector further comprises: a masking threshold generator arranged to provide an estimate of a masking threshold for said successive fragments of the post-processed audio signal (col. 7 line 12-32); and a noise level detector arranged to provide an estimate of a noise level for said successive fragments of said post-processed audio signal (col. 5 line 26-46) wherein said distortion detector determines said degree to which the quantization noise introduced in encoding said successive fragments of said previously-encoded audio signal becomes audible according a degree to which said noise level exceeds said masking threshold for said successive fragments of said post-processed audio signal (col. 5 line 39-41 and col. 7 line 48-52 and abstract).

Claim 3 analyzed with respect to claim 2, Akagiri discloses further comprising a decoder arranged to receive said successive fragments of said previously-encoded audio signal to decode said successive fragments of said previously-encoded audio signal and to produce said successive fragments of the decoded audio signal (Fig. 14-16 and col. 9 lines 47-65).

Claim 5 analyzed with respect to claim 2, Akagiri discloses wherein said masking threshold generator comprises a psycho-acoustic modeling component arranged to transform said successive fragments of said post-processed audio signal into the

frequency domain; and to derive said masking threshold therefrom (col. 6 line 34-55 and col. 7 line 12-32).

Claim 6 analyzed with respect to claim 2, wherein said masking threshold generator comprises a psycho-acoustic modeling component arranged to receive said successive fragments of said previously-encoded audio signal (Fig. 6 and col. 6 line 34-60 and col. 7 line 35-45) and to produce successive fragments of a modeled audio signal; to apply a same post-processing algorithm to said successive fragments of the modeled audio signal as said post-processor applies to the successive fragments of the decoded audio signal (Fig. 6 and 16 input 1 and output of 13 and col. 3 line 7-26); to transform said successive post-processed fragments of the modeled audio signal into the frequency domain (col. 6 line 34-49); and to derive said masking threshold from said post-processed fragments of the modeled audio signal (col. 6 line 34-55 and col. 7 line 12-32).

Claim 10 Akagiri discloses a method of processing an audio stream (abstract) comprising: post-processing successive fragments of a decoded audio signal to provide successive fragments of post-processed audio signal (col. 9 line 57-61); detecting a degree to which quantization noise introduced in encoding said successive fragments of audio signal becomes audible due to said post-processing; and regulating said post-processing step according to said degree (Fig. 6 and col. 5 line 26-45).

Claim 11 analyzed with respect to claim 10, Akagiri discloses wherein detecting a degree to which quantization noise introduced in encoding the successive fragments of audio signal becomes audible due to the post-processing (abstract Fig. 14-16) line comprises: producing an estimate of a masking threshold for the successive fragments of the post-processed audio signal (col. 6 line 34-55 and col. 7 line 12-32); producing an estimate of a noise level for the successive fragments of the post-processed audio signal (col. 5 line 26-46) ; and determining the degree to which the quantization noise introduced in encoding the successive fragments of the previously-encoded audio signal becomes audible (Fig. 14-16 and abstract), according to a degree to which the noise level exceeds the masking threshold for the successive fragments of the post-processed audio signal (Fig. 16 and col. 10 line 15-29).

Claim 12 analyzed with respect to 10-11, Akagiri discloses
receiving the successive fragments of the previously-encoded audio signal;
decoding the successive fragments of the previously-encoded audio signal;
and producing the successive fragments of the decoded audio signal (Fig. 14-16 and col. 46-65).

Claim 14 analyzed with respect to claim 11, Akagiri discloses wherein producing the estimate of the masking threshold comprises psycho-acoustically modeling the successive fragments of the post-processed audio signal to transform the successive

fragments of the post- processed audio signal into the frequency domain; and to derive the masking threshold therefrom (col. 6 line 34-55 and col. 7 line 12-32).

Claim 15 analyzed with respect to claim 11, Akagiri discloses wherein producing the estimate of the masking threshold comprises: psycho-acoustically modeling the successive fragments of the previously- encoded audio signal to produce successive fragments of a modeled audio signal (Fig. 6 and col. 6 line 34-60 and col. 7 line 35-45); applying a same post-processing algorithm to the successive fragments of the modeled audio signal as said post-processing applies to the successive fragments of the decoded audio signal (Fig. 6 and 16 input 1 and output of 13 and col. 3 line 7-26); transforming the successive post-processed fragments of the modeled audio signal into the frequency domain(col. 6 line 34-49); and deriving the masking threshold from the post-processed fragments of the modeled audio signal (col. 6 line 34-55 and col. 7 line 12-32).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 4, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akagiri et al (RE37864) in view of Kirkeby (6928168).

Claim 4 analyzed with respect to claim 3, Akagiri does not explicitly disclose wherein said decoder produces stereo-encoded successive pairs of fragments of the decoded audio signal and said post-processor applies stereo-widening to said successive pairs of fragments of the decoded audio signal.

However, Akagiri discloses wherein said decoder produces audio from CD players (col. 9 line 47-50).

Kirkeby discloses decoder produces stereo-encoded successive pairs of fragments of the decoded audio signal and said post-processor applies stereo-widening to said successive pairs of fragments of the decoded audio signal (abstract and col. 5 line 5-20).

Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the reproducing circuit of Akagiri with the stereo widening process of Kirkeby so that a listener can enjoy high quality and a more spatial sound.

Claim 13 analyzed with respect to 10-12, Akairi does not explicitly disclose wherein said decoding produces stereo- encoded successive pairs of fragments of the decoded audio signal, and wherein said post-processing comprises applying stereo-widening to the successive pairs of fragments of the decoded audio signal.

However, Akagiri discloses wherein said decoder produces audio from CD players (col. 9 line 47-50).

Kirkeby discloses decoder produces stereo-encoded successive pairs of fragments of the decoded audio signal and said post-processor applies stereo-widening to said successive pairs of fragments of the decoded audio signal (abstract and col. 5 line 5-20).

Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the reproducing circuit of Akagiri with the stereo widening process of Kirkeby so that a listener can enjoy high quality and a more spatial sound.

8. Claim 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akagiri et al (RE37864).

Claim 8 analyzed with respect to claim 2, Akagiri discloses where said noise level detector is arranged to determine quantization levels employed in encoding the successive fragments of said encoded audio signal (Fig. 14-16 and col. 9 lines 47-65).

9. Claims 7 and 9, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akagiri al (RE37864) in view of Moehrs et al (Analysing decompressed audio with the “Inverse Decoder”-towards an Operative Algorithm).

Claim 7 analyzed with respect to claim 7, 2 Akagiri discloses decoder arranged to receive said successive fragments of the decoded audio signal and to provide therefrom

indications of quantization levels employed in the successive fragments of said previously-encoded audio signal (Fig. 6 and Fig. 14-16 and col. 10 line 15-29).

Akagiri does not disclose an inverse decoder.

Moehrs discloses an inverse decoder (page 8, column 2, Section Conclusion).

Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the noise reducer of Akagiri with the inverse decoder of Moehrs in order to be able to recover the encoded compression parameters as taught by Moehrs (abstract).

Claim 9 analyzed with respect to 7, 2, 1 Akagiri discloses wherein said noise level detector is arranged to derive from said quantization levels successive distributions of noise level for said successive fragments of the decoded audio signal (Fig. 1 and 16), and to apply a same post-processing algorithm to said successive distributions of noise level as said post-processor provides to successive estimates of noise level for said successive fragments of said post-processed audio signal (Fig. 1 and col. 3 line 7-25).

Claim 16 analyzed with respect to claim 11, Akagiri discloses applying the successive fragments of the decoded audio signal to a decoder; and providing from the decoder indications of quantization levels employed in encoding the successive fragments of the encoded audio signal (Fig. 6 and Fig. 14-16 and col. 10 line 15-29).

Akagiri does not disclose an inverse decoder.

Moehrs discloses an inverse decoder (page 8, column 2, Section Conclusion).

Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the noise reducer of Akagiri with the inverse decoder of Moehrs in order to be able to recover the encoded compression parameters as taught by Moehrs (abstract).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FATIMAT O. OLANIRAN whose telephone number is (571)270-3437. The examiner can normally be reached on M-F 10:00-6 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FO

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2614